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ABSTRACT

This report represents phase two in the development of Missouri's telecommunications-based delivery system for postsecondary education. The 1996 report challenged the state's public and independent colleges and universities to use inter-institutional partnering and emerging telecommunications technologies to improve citizens' access to education. Building on that report and through the mission review process, Missouri's postsecondary education system has initiated regional educational councils and consortia, developed needed distance education programs, and expanded the capacity of its telecommunications network. Now the Telecommunications Advisory Group affirms the direction set in the 1996 report and challenges expanding needs of its customers and forging effective and proactive educational partnerships. Key recommendations of the group include: (1) moving beyond barriers of place and time; (2) a focus on partnerships and collaboration; (3) providing needed quality programs; (4) seamless student support services; (5) library resources for distance learning; (6) faculty roles and support in distance learning; and (7) cooperative technology strategies. A list of subcommittee members, an outline of Best Practices in Distance Education, draft revised Association for College and Research Libraries Guidelines for Distance Education, and Missouri's interactive video education networks are all appended. (AEF)

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From Here to Transformation

Phase II in the Implementation of Missouri's Telecommunications-based Delivery System for Higher Education

A Report Presented to the
Missouri Coordinating Board for Higher Education
by the
CBHE Telecommunications Advisory Group

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TABLE OF CONTENTS

	Page
Executive Summary	i
I. Introduction	1
II. Moving Beyond Barriers of Place and Time	2
III. A Focus on Partnerships and Collaboration	3
IV. Providing Needed Quality Programs	7
V. Seamless Student Support Services	9
VI. Library Resources for Distance Learning	11
VII. Faculty Roles and Support in Distance Learning	12
VIII. Cooperative Technology Strategies	13
IX. Next Steps	15

Appendices

A. Members of the Subcommittees
B. Best Practices in Distance Education
C. Draft Revised Association for College and Research Libraries Guidelines for Distance Education
D. Missouri's Interactive Video Education Networks

EXECUTIVE SUMMARY

This report represents phase two in the development of Missouri's telecommunications-based delivery system for postsecondary education. Last year's (1996) report challenged the state's public and independent colleges and universities to use inter-institutional partnering and emerging telecommunications technologies to improve citizens' access to education. Building on that report and through the mission review process, Missouri's postsecondary education system has initiated regional educational councils and consortia, developed needed distance education programs, and expanded the capacity of its telecommunications network. Now the Telecommunications Advisory Group affirms the direction set in last year's report and challenges Missouri's postsecondary education system to move forward with a focus on meeting the expanding needs of its customers and forging effective and proactive educational partnerships. Key recommendations of the group include:

Moving Beyond Barriers of Place and Time

1. The most cost-effective way to increase Missourians' access to quality postsecondary education is to extend programs and services wherever, whenever and however they are needed using the telecommunications-based delivery system and collaboration among Missouri public and independent colleges and universities.

A Focus on Partnerships and Collaboration

2. Through the mission review process and legislative appropriation requests, several consortia and collaborative partnerships have been supported. These initial efforts should be fostered and encouraged as a cost-effective way to deliver needed programs and services.

3. Missouri colleges and universities must ensure that customer and market needs drive program and delivery decisions. These principal customers include traditional students, lifelong learners, the professions, business and industry, economic development councils and other consumers of Missouri postsecondary education.

4. Regional planning organizations and partnerships must serve as effective mechanisms for meeting customer needs. These organizations should bring together representatives of public and independent colleges and universities in the region, other Missouri institutions that wish to serve the region, and the region's principal customers. Needs assessment and joint long-range planning should drive decisions about program delivery; partners from both inside and outside the regions should be encouraged to collaborate.

5. Participation in a regional planning organization involves both responsibilities and opportunities, and members should have a proactive and cooperative approach. Such organizations should adopt a set of customer-focused principles similar to those suggested in this report to guide their operation. Their decisions should support cost-effective use of

state resources and discourage unnecessary program duplication. Requests for new program approval submitted by institutions to the CBHE should reflect the support of regional partners.

6. The CBHE should encourage and support collaborative partnerships and programs and periodically convene leaders of regional planning organizations to promote communication and facilitate intra- and inter-regional cooperation to meet statewide education needs.

Providing Needed Quality Programs

7. The CBHE's legislative appropriation requests should support the delivery of cooperative distance education programs, especially those activities that meet state or regional needs that are not attractive to entrepreneurial providers, and that promote creative, cutting-edge approaches. An advisory committee should help set an agenda for the development of programs that match the distance learning needs of Missouri.

8. It will be crucial to continually assess and improve the quality of Missouri's telecommunications-based delivery system. The best way to certify the quality of student learning via distance learning programs is through the use of well-defined exit competencies.

Seamless Student Support Services

9. Students pursuing courses and programs via telecommunications need convenient access to the information and support services necessary for their success. Some support services should be provided by state initiative, such as the development of a smart on-line catalogue, maintenance of a clearinghouse for student academic records, and reform in state financial aid rules. Further study of issues related to the electronic transfer of student eligibility data and electronic delivery of funds is recommended. Other support services should be provided collaboratively by institutions closest to students regardless of the origin of programming (see Appendix B for a listing of Best Practices in Distance Learning).

Library Resources for Distance Learning

10. Distance education students need convenient access to digital and conventional library resources appropriate to their course and program needs. Missouri should invest in improved Internet-based access to digitized and multimedia library resources as well as a common library platform to strengthen the intellectual resource base available to both distant and campus-based learners.

Faculty Roles and Support in Distance Learning

11. Faculty are central to the success of distance education and must receive appropriate support. The combined capacities of the state's colleges and universities can be used to provide a "virtual" distance education academy for faculty, utilizing expertise from across

the state. Two institutions have, through the mission review process and legislative appropriations, received responsibility to take a leadership role in offering faculty training in the use of advanced technologies for distance education, and the opportunity to develop skills in the design and assessment of courses and programs to be delivered using these technologies. Expertise of other institutions should be utilized in this initiative as well.

12. Faculty participating in distance education must have institutional support from administrators and colleagues, as well as appropriate resources and technical support.

Cooperative Technology Strategies

13. Advances in Internet-based technologies are leading to the inevitable integration of voice, video, and data transmissions as well as increased demand for network access and capacity. Missouri should expand its investment in a telecommunications infrastructure that supports this scenario and initiate pilot projects that use the Internet to link one or more regional IT-V networks. If investments are to be made in dedicated lines and two-way video switching technologies, institutions are encouraged to adopt compressed approaches using the H.320 standard and fractional T1 lines wherever possible.

Next Steps

14. CBHE staff should work with appropriate institutional personnel or others to develop cost estimates for the above projects and recommendations for best ways to implement them, whether via CBHE initiative, institutional initiatives or external contracts, in time for inclusion in the Fiscal Year 1999 budget where possible.

15. The progress of the telecommunications-based delivery system toward achieving its goals of customer focus, partnering, increased access, quality and cost-efficiency should be reexamined every two years by a representative statewide group.

Missouri's citizens must have expanded educational access and lifelong learning opportunities. As the expectations of postsecondary education change and increase in response to this need, exciting opportunities and challenges face Missouri's institutions. The combined faculty and educational resources of Missouri's postsecondary system are a rich resource equal to this task. This report suggests the next steps for colleges and universities as they implement a telecommunications-based delivery system that meets the growing postsecondary education needs of the state, and urges a collaborative, customer-oriented focus in the pursuit of this important goal.

INTRODUCTION

At the core of this more promising future is a paradox that only higher education itself can resolve: colleges and universities must simultaneously become very nearly interchangeable nodes on an expanding educational network, and, as individual institutions, they must become more distinctive and discernible from one another.

The Pew Higher Education Roundtable

The 1996 Report of the Telecommunications-based Delivery System Resource Group laid the groundwork for the development of Missouri's telecommunications-based delivery system. That report, which is an integral component of Missouri's 1996 Blueprint for Higher Education, urged the state to build on existing institutions and telecommunications networks through partnerships among the state's public and independent colleges and universities to increase citizen's access to postsecondary education. It also provided a set of recommendations that described the characteristics of an effective telecommunications-based delivery system. The report emphasized that the telecommunications network needs of the higher education community need to be explicitly included in the state's plan for an expanded statewide voice/video/data network. The recommendations addressed the need for the CBHE to revise its program approval procedures and funding guidelines. Also, in addition to proposing a common system for the electronic exchange of student transcript and financial aid data, the report provided initial guidance to institutions and partnerships on meeting the needs of distance learners, recommended statewide access to library resources and recognized the importance of faculty involvement.

Since the release of that report, a number of public institutions have incorporated telecommunications-based delivery into their mission enhancements, Northwest and Southeast Missouri have initiated regional educational consortia, and cooperative degree programs are being developed and implemented. In addition, new state funds have been obtained for expanding the capacity and accessibility of the postsecondary education telecommunications network backbone.

Responding to the recommendation of the 1996 Report of the Telecommunications-based Delivery System Resource Group, the Telecommunications Advisory Group was created by the Coordinating Board for Higher Education in October 1996 and charged with proposing next steps to lead Missouri forward in the development and implementation of the telecommunications-based delivery system for postsecondary education. This report builds on the CBHE's 1992 Critical Choices Report, the 1996 Report of the Telecommunication-Based Delivery System Resource Group, and the recommendations of the 1996 Missouri Pew Higher Education Roundtable, sponsored by the University of Missouri and the CBHE. The 1996 Pew Higher Education Roundtable made these recommendations: a statewide electronic catalog of courses and programs, a common library catalog and resource delivery system, a strengthened statewide telecommunications network, and statewide discipline-based faculty forums.

The Telecommunications Advisory Group has developed a set of recommendations that provides a state policy and procedural context to support the distance learning vision. Taken as a whole,

these strategies provide a coherent action plan in the development of Missouri's telecommunications-based delivery system. By building on CBHE's previous work and addressing each of the Pew recommendations, this report challenges the state's postsecondary education system to focus on the needs of its customers, expand its use of partnering and collaboration, and set mechanisms in place that will ensure the success of its new collaborative efforts.

MOVING BEYOND BARRIERS OF PLACE AND TIME

Recommendation #1
The most cost-effective way to increase Missourians' access to quality postsecondary education is to extend programs and services wherever, whenever and however they are needed using the telecommunications-based delivery system and collaboration among Missouri public and independent colleges and universities.

A Vision for the Future

The Telecommunication Advisory Group's vision for distance education in Missouri is:

> **Missouri's citizens, the customers of the state's educational system, have changing and ever-increasing needs for postsecondary education. Missouri's colleges and universities will provide efficient and high quality postsecondary education to the state and its citizens wherever, whenever, and however they need it. The higher education community will accomplish this by working collaboratively with each other and using telecommunications more widely. Improved access should result in a doubling of the number of customers served by postsecondary distance learning courses and programs in Missouri.**
>
> **More rapidly than we now imagine, our public and independent institutions will move forward together to provide learning in ways that take full advantage of the capabilities of information technology and a quick and effective response to learner needs. Colleges and universities will continue to provide a variety of valuable campus-based courses and programs, but many will also develop collaborative, technology-enhanced off-campus learning opportunities. The synergy between on- and off-campus programs will increase the responsiveness of the system to learners and advance the quality and capabilities of Missouri's postsecondary education system as a whole.**

Movement toward this vision is an urgent matter because we are living in a time of rapid and significant change. Stanford University President Gerhard Casper states that "the early decades of the next millennium may bring more change to universities than their first 1,000 years." In order to contribute to society in the coming millennium, with the astounding growth of information

technology, colleges and universities must offer strong reasons for their continued existence Casper asserts, "The world may need us, but it does not owe us anything."

A FOCUS ON PARTNERSHIPS AND COLLABORATION

Technology has provided institutions new opportunities to expand educational delivery and serve as education brokers for their constituents. These new possibilities open the door for unprecedented access and improved quality and efficiency through the sharing of faculty and resources. While many of Missouri's public institutions have traditionally served defined regions of the state, enrollment recruitment strategies are changing as institutions establish new clientele and refine their missions. New initiatives by institutions for delivery beyond traditional boundaries have generated inter-institutional concerns regarding the duplication of programs, facilities and infrastructures. Because distance education presents challenges to the current structure for the coordination of postsecondary education, Missouri's institutions must cooperate in the coordination of needs assessment, prioritizing and planning for the delivery of postsecondary education.

Cooperation Among Missouri Institutions

Recommendation #2:
Through the mission review process and legislative appropriation requests, several consortia and collaborative partnerships have been supported. These initial efforts should be fostered and encouraged as a cost-effective way to deliver needed programs and services.

Many public and independent colleges and universities in Missouri have responded to programmatic and economic development needs by embracing the notion of cooperation and partnerships. Through the mission review process and legislative appropriation requests, a number of regional partnerships and programmatic consortia have been initiated. A complete list of collaborative activities among the institutions would be too lengthy for this report; the following, however, is representative of the many activities underway.

The Northwest Regional Education Consortium has been created to plan for and coordinate postsecondary educational services in the region. Its members include Northwest, Missouri Western State College, North Central Missouri College, the University of Missouri, and area vocational technical schools. The Southeast Missouri Educational Consortium, whose members include Southeast, Three Rivers Community College, Mineral Area College and the University of Missouri, will provide services to the Southeast region of Missouri.

Building on the CBHE's 1996 Missouri State Plan for Postsecondary Technical Education, Regional Technical Education Councils (RTECs) have been established in each community college voluntary service region, representing public and private institutions, proprietary schools, area vocational technical schools, business and industry and state and federal programs related to

economic development. RTECs work cooperatively to address the technological education needs of their regions, enhance existing programs, develop new AAS degree programs, and expand access within their voluntary service regions.

Educational partnerships are evolving to develop and deliver cooperative degree programs, such as the doctorate in educational leadership, which is now available through a partnership involving Central Missouri State University, Northwest Missouri State University, Southeast Missouri State University, Southwest Missouri State University, the University of Missouri-Columbia, and the University of Missouri-Rolla. Cooperative distance learning efforts also involve independent institutions. For example, students at East Central College, a public two-year institution, can complete their bachelor's degrees in education or nursing by participating in two-way interactive video courses from Central Methodist College.

The University of Missouri System has developed Telecommunication Community Resource Centers (TCRCs) which link Poplar Bluff, Portageville, Camdenton and Mexico to UM campuses. Additional TCRCs are planned in Nevada, Park Hills, Kirksville, and Springfield.

Through regional planning and cooperation, education providers in a region can best meet the needs of their customers. They can maximize access and the quality of educational offerings as they coordinate and integrate their efforts to minimize the unnecessary duplication of services.

Recommendation #3:
Missouri colleges and universities must ensure that customer and market needs drive program and delivery decisions.

George Connick, President of the Education Network of Maine declares: "The future will likely be kind to institutions that focus on a clearly articulated mission, that eliminate peripheral programs and services in order to achieve cost efficiencies, and successfully collaborate with a variety of institutions, within and outside their own locale, in order to provide their students and community with the broadest array of educational opportunities, regardless of the source." Missouri's postsecondary education system is challenged to provide distance education programs that respond directly and quickly to the educational needs of its customers. These principal customers include traditional students, lifelong learners, the professions, business and industry, economic development councils and other consumers of Missouri postsecondary education.

Education providers from outside the state will be increasing their course and program offerings over television and the Internet. Missouri institutions, however, can cooperate to provide a mix of approaches and programs that ensure the vitality of the state's postsecondary education system. The combined faculty and educational resources of Missouri's postsecondary system are a rich resource. Inter-institutional partnering and collaboration offer the capacity to effectively address emerging customer needs and the opportunity to provide unique high quality educational opportunities that surpass opportunities external providers may offer. Missouri's system of postsecondary education needs to develop and enhance its strengths in distance education, including:

- Providing programs that directly target the needs of local and regional students and employers.
- Creatively designing courses and programs which enhance learning.
- Collaborating with other institutions where appropriate.
- Accurately assessing what students learn and providing information for continuous improvement.
- Providing flexible support services that enable learners to function effectively in a variety of educational settings.

By adopting a proactive, collaborative approach, Missouri's postsecondary education system can build these distance education competencies and provide its constituencies with a telecommunications-based delivery system characterized by improved access, quality and efficiency.

Making Regional Planning Organizations Work

Recommendation #4:
Regional planning organizations and partnerships must serve as effective mechanisms for meeting customer needs. Needs assessment and joint long-range planning should drive decisions about program delivery; partners from both inside and outside the regions should be encouraged to collaborate.

The Governor and CBHE support the emerging regional education consortia, RTEC's and cooperative degree programs as powerful models for regional cooperation and the wise use of resources. These partnerships are proactive regional planning mechanisms for improving customer service and promoting cooperation and collaboration among institutions. Regional planning organizations should promote customer-focused needs assessment, joint long-range planning, and collaboration to determine the most cost-effective way for education providers, whether from inside or outside the region, to effectively meet specific customer needs. While the organizational structures used by regional organizations may vary, they should involve the partnering of similar constituencies, address similar opportunities and responsibilities, and adopt similar principles of good practice.

Constituencies

It is anticipated that regional planning organizations will bring together a balance of customers and providers, i.e., representatives of colleges and universities in the region, other Missouri institutions that wish to join and serve the region, and the region's principal customers, including students, secondary schools, business and industry, the professions, economic development councils, and others. Consortia should invite all interested Missouri institutions to the table to assist in meeting learner needs, as long as each is willing to abide by the tenets of the consortium.

Principles of Good Practice

Recommendation #5:
Participation in a regional planning organization involves both responsibilities and opportunities, and members should have a proactive and cooperative approach.

It is the responsibility of partnering institutions and organizations to assume a leadership role to ensure that the needs of citizens are served well. Although they may develop different organizational structures, regional planning organizations are expected to provide leadership and take a proactive stance in meeting the needs of its respective region. They should adopt a set of customer-focused principles similar to those suggested below to guide their operation. Regional planning organizations should:

1) Assess, analyze and prioritize postsecondary education needs of the citizens in the area by engaging in joint long-range regional planning. They should cooperate with the CBHE and each other in identifying and addressing needs that affect multiple regions of the state.

2) Coordinate the delivery of needed distance learning services. Their decisions regarding delivery of services should be driven by the needs of the learners, the region and the state, rather than those of the institutions. Where appropriate, they should make use of the expertise of providers from outside the region.

3) Foster inter-institutional cooperation and collaboration and work together to promote cost-effective use of public resources and avoid program duplication.

4) Ensure that requests for new program approval submitted by institutions to the CBHE reflect the support of regional partners. In following these principles of good practice, the statutory requirements regarding coordination and elimination of duplication will substantively have been met prior to submission of a proposal to the CBHE.

5) Serve as forums for sharing new distance learning knowledge and as catalysts for the development of Missouri's distance learning programs of the future.

6) Coordinate the development of telecommunications networks and facilities within the region to ensure that they can interconnect as needed on a regional or statewide basis.

7) Continually assess and improve their effectiveness in meeting learner needs.

Regional planning organizations should cooperatively determine which institution or combination of institutions is best positioned to provide a quality, cost-effective response to an identified need. In the event of conflicting aspirations by institutions, the regional planning organization would use an agreed-upon set of criteria to select one institution or a combination of institutions. These criteria, which are consistent with the statutory provisions for program approval, should address: congruence with mission, capacity to meet the specific customer need in a timely manner; cost-effectiveness; collaborative nature of proposal; program accreditation; level of institutional

commitment, experience with similar programs, and incorporation of assessment and continuous quality improvement measures. If the organization can not assign an identified need to any member, it should forward this need to the CBHE.

Role of the CBHE

Recommendation #6:
The CBHE should encourage and support collaborative partnerships and programs and periodically convene leaders of regional organizations to promote communication and facilitate inter-regional cooperation to meet statewide educational needs.

To maximize the responsiveness, quality, accessibility and effectiveness of Missouri's postsecondary education system, the CBHE should provide leadership and guidance to regional planning organizations. It should facilitate their effectiveness in several ways:

- Collaborative and cooperative proposals for needed programs should receive priority in CBHE funding recommendations.
- In areas of the state where regional organizations exist, the CBHE should expect that proposals for new programs have received support from those organizations prior to submission for approval. Regional planning organizations' efforts to support, coordinate and track distance learning activities should complement the CBHE's course and program approval policies.
- The CBHE should convene representatives of regional planning organizations on a regular basis to coordinate the development of the organizations and share information on their progress.
- The CBHE should share the results of any statewide needs assessments relevant to distance learning.
- When regions are not able to plan a solution for meeting a regional need, that need should be forwarded to the CBHE for resolution.
- The CBHE should maintain as a part of its "Smart Catalog" (see below) a comprehensive easy-to-use inventory of Missouri distance learning information.

PROVIDING NEEDED QUALITY PROGRAMS

Missourians need access to a range of quality postsecondary education opportunities. From certificate programs and associate degrees to doctoral programs and continuing professional education, the challenges and opportunities for distance learning in the state are extensive. Clara Lovett, president of Northern Arizona State University describes the challenge of extending a university's reach by providing distance education through telecommunications: "You cannot say that these different groups of students experience the university in the same way. The challenge is not how we produce mini-versions of the university all over Arizona, but how we invent new

models of interactions between students and the institution, and how we invent new communities of learning that are different from the traditional campus, but no less valuable to the students."

Recommendation #7:
The CBHE's legislative appropriation requests should support the delivery of cooperative distance education programs, especially those activities that meet state or regional needs that are not attractive to entrepreneurial providers, and that promote creative, cutting-edge approaches.

While state support has been provided to a few institutions for delivery of distance learning, in general, off-campus and out-of-district programs have been expected to be self-supporting. In light of the many emerging distance education needs of Missouri's citizens, it is in the state's best interest to encourage and provide expanded support for the development of such programs. The CBHE's legislative appropriations request should support the delivery of distance education programs that meet state or regional needs that are not attractive to entrepreneurial providers. Public two- and four-year institutions should be aware of the procedure for allocating this funding and the process should give priority to collaborative approaches to educational delivery. In addition, creative, cutting-edge distance education projects should be eligible for state funding. Such innovation is crucial to the ability of our institutions to keep up with the revolutionary changes in the ways people will learn in the future. An advisory committee should help set an agenda for the development of programs that match the distance learning needs of Missouri.

Recommendation #8:
It will be crucial to continually assess and improve the quality of Missouri's telecommunications-based delivery system. The best way to certify the quality of student learning via distance learning programs is through the use of well-defined exit competencies.

A major issue in distance learning is the assurance of program comparability, not only between traditional campus programs and those offered at a distance, but also among institutions offering the same program at a distance. The listing of best practices in Appendix B provides guidance for institutions in the design and delivery of distance learning programs. The best way to ensure uniformly high levels of program quality is to insist on an outcomes-based approach to assessment. Assessment includes multiple measures appropriate to the program and the institution using them. Assessment programs should be based on reliable research and proven practices, and the data collected should be longitudinal and should include both quantitative and qualitative elements. By these standards, achievement levels of programs would be the same whether offered on or off the campus.

SEAMLESS STUDENT SUPPORT SERVICES

Recommendation #9:
Some student support services should be provided by state initiative, such as the development of a smart on-line catalog, maintenance of a clearinghouse for student academic records, and reform in state financial aid rules. Other student support services should be provided collaboratively by institutions closest to students regardless of the origin of programming.

Students pursuing courses and programs via telecommunications need convenient access to the information and support services necessary for their success. Student success in distance learning requires intensive learner-focused support by institutions and dedicated commitment to achieve on the part of the learner. An additional set of support services must be put in place by Missouri's colleges and universities to support Missouri's distance learners. The following actions are recommended.

Development of a Smart Catalog

The CBHE World Wide Web site should house a "smart catalog" of information on postsecondary distance education opportunities in Missouri. The smart catalog should make it easy for any Missouri student to quickly determine what courses or programs are available at locations and times convenient to them. Faculty should be urged to provide an on-line syllabus for each listed course and program. Creation of this distance learning catalog will be the first step in implementing the recommendation of the 1996 Missouri Pew Higher Education Roundtable for a comprehensive electronic catalog of all Missouri postsecondary education courses and programs.

The CBHE web site should also provide access to a prepackaged career exploration program that assists users with career decisions and offers direct links to information on appropriate educational and financial resources. It should allow users to easily search for information on specific degree and certificate programs and other educational opportunities at all institutions. The CBHE web site should also allow students to access information regarding program and course articulation across institutions and a degree audit system that can determine the applicability of the student's previous Missouri courses toward all programs of interest across the state.

The upgrading and maintenance of the CBHE site to provide "smart catalog" services could be contracted out competitively. The CBHE may want to release a Request for Information (RFI) to determine the cost of the "smart" catalog, opening the competition to institutions as well as businesses. Institutions would be responsible for keeping their program information updated.

Maintenance of a Clearinghouse for Student Academic Records

A statewide clearinghouse for academic records would serve as a single collection point to consolidate multiple transcripts into one record and provide students - and those with whom they choose to share their transcripts - a single point of access to the consolidated record. The clearinghouse would reduce the time, effort and expense associated with handling multiple

transcripts for both students and institutions. The clearinghouse would not evaluate the transcript content but merely validate the authenticity of and accumulate the components of the transcript. At the request of the student, institutions would be required to provide student transcripts, records and financial aid information to the clearinghouse through electronic data exchange (EDI). The CBHE may want to release a Request for Information (RFI) to determine the market for and cost of this proposed statewide clearinghouse, opening the competition to institutions as well as businesses.

Reform in State Financial Aid Rules

The accessibility of financial aid to qualified students is a crucial distance education issue. Making all state financial aid programs available to students with enrollments at multiple institutions may require changes in state statutes to allow any student enrolled in 12 or more credit hours at multiple approved Missouri institutions to be considered for state financial aid programs. (Approved institutions are those that currently participate in state grant and scholarship programs.) The CBHE may wish to request that these statutory amendments be introduced in the 1998 legislative session.

It is also recommended that eligibility data and funds be transferred electronically to expedite student receipt of aid. Quick delivery of state financial aid to students enrolled in multiple institutions requires that all approved institutions use consortium agreements and be linked electronically so data on students' enrollment eligibility and designated home schools can be exchanged rapidly. While the US Department of Education currently maintains a National Student Loan Database (NSLD), this database does not contain the necessary information needed to assess state or federal student aid eligibility, i.e., the student academic record and the number of credit hours currently enrolled. Missouri will need an electronic database other than the NSLD to determine eligibility and home college for students with multiple enrollments. It is also recommended that the CBHE initiate an electronic fund transfer (EFT) process for the delivery of state aid to distance education students.

The electronic transfer of eligibility data and funds is a complex topic deserving of further study. It is recommended that a group with appropriate expertise address this topic during the Fall 1997 semester to ascertain how electronic information transfer can best be used, how privacy issues can be addressed effectively, and what related fund requests might be appropriate in the FY 1999 legislative appropriations request. Finally, easy-to-use information on all aspects of state and federal financial aid programs should be made available through CBHE's "smart catalog."

Institutional Student Support Services

Student support services comparable to those available to on-campus students should be available to distant learners. Institutional responsibilities for student support services have been included in the "Best Practices in Distance Education" (Appendix B).

LIBRARY RESOURCES FOR DISTANCE LEARNING

Recommendation #10:
Missouri should invest in improved Internet-based access to digitized and multimedia library resources as well as a common library platform to strengthen the intellectual resource base available to both distant and campus-based learners.

Digital Resources

Faculty and students engaged in distance education need easy access to a web-based library of digital and multimedia learning resources appropriate to their courses and programs. Missouri should invest in the acquisition of full-text digital resources as well as digitization of the state's unique library resources. The development of a set of such resources would be complementary to the development of the statewide common library platform, both of which will benefit both distant and campus-based learners.

In addition, a virtual collection of resources for distance learning could be maintained through the "Virtual" Distance Learning Academy for faculty, which is introduced in the following section of this report. Through this digital collection, faculty and students engaged in distance learning could create web pages to support their instructional programs. Because some planners anticipate that the web page will become the building block for the curriculum of the future, this capability will advance faculty's ability in this important area. The CBHE may want to release a Request for Information (RFI) to determine the cost of a web-based library of digital and multimedia resources.

Common Library Platform

The 1996 Telecommunications-based Delivery System Report recommended that the state develop an easy-to-use common library platform that supports direct on-line borrowing by any student or other authorized user from any Missouri academic library and provides quick delivery to locations across the state. This need was reaffirmed by the 1996 Missouri Pew Roundtable on Higher Education as one of its top recommendations. The statewide common system will also provide assistance from reference librarians at member institutions via interactive or video mail mode, e-mail, fax, telephone and regular mail.

The Missouri Public Academic Librarians Association (MPALA), in cooperation with the state library, other public and independent libraries, and the CBHE, has submitted and received vendor responses to a Request for Information (RFI). The Council for Public Higher Education (COPHE) has employed a library network consultant to evaluate these responses and bring forward a funding proposal for the Fiscal Year 1999 higher education budget request, with an RFP being issued to vendors in July 1998 for implementation beginning in Fiscal Year 1999. Each institution will be responsible for committing to reciprocal agreements, provision of network infrastructure and workstations, and ongoing local costs. A consortium of the libraries will operate a central site and pursue further partnering with the state's public libraries.

The Association for College and Research Libraries has issued a draft revised set of guidelines related to library resource support of courses and programs (Appendix C), which should be followed by all Missouri academic libraries.

FACULTY ROLES AND SUPPORT IN DISTANCE LEARNING

Faculty are central to the success of distance education and must receive appropriate support at both state and institutional levels. Although it is tempting to focus on the opportunities that distance learning provides for postsecondary education to stretch and grow, distance education may bring unanticipated changes in faculty roles and responsibilities. Faculty involved in distance learning need the opportunity to develop skills in using new technologies and in developing and evaluating distance education courses and programs. Even more significant are the long term changes required when new educational technologies and distance learning change faculty roles. Dispensing information will become a less central part of the teaching/learning function while the importance of facilitating learning - program packaging, assessment and student support - will increase. One can envision an educational enterprise in which each of these functions is fulfilled by an individual with special strengths in these areas. To successfully address the opportunities and challenges of distance education, faculty must be provided with support at both institutional and state levels.

"Virtual" Distance Learning Academy for Faculty

Recommendation #11:
Faculty are central to the success of distance education and must receive appropriate support. The combined capacities of the state's colleges and universities can be used to provide a "virtual" distance education academy for faculty, utilizing expertise from across the state.

The combined capacities of the state's colleges and universities can be used to provide a "virtual" distance education academy for faculty, utilizing expertise from across the state. It should empower faculty to take advantage of information technology and work together within disciplines across campuses to enhance the quality of academic programs. This initiative would tap the combined capacities of the state's colleges and universities to offer faculty opportunities for (a) training in the use of advanced technologies for distance education, (b) developing skills in the design and assessment of courses and programs to be delivered using these technologies, (c) access to multimedia resources for teaching, (d) collaboration within and across disciplines, and (e) participating in related research. The investment of state-level resources in such training would accelerate faculty preparation for distance learning and assure a higher and more uniform level of faculty preparation across the state.

Two institutions have, through the mission review process and legislative appropriations, received responsibility to take a leadership role in the state in offering distance education training to

faculty. Central Missouri State University has a statewide mission to provide distance education for vocational/technical instructors and faculty via two-way interactive television and KMOS satellite and cable television, and has the capacity to provide the state's faculty members with training in the use of advanced telecommunications technologies. In addition, Northwest Missouri State University has been designated to be Missouri's center for the testing and development of personal computer applications for the enhancement of learning, to take the lead in using information technology to modularize learning so learners can learn at their own pace at a time and place that suits them and to make their work broadly accessible to Missouri institutions. Northwest should be well equipped to teach faculty how to design courses and programs for distance education and to recommend or provide multimedia resources. The expertise of other institutions should be utilized in this initiative as well.

Sharing Best Practices and Showcasing Innovations

It is recommended that opportunities be provided for faculty from across the state to share best practices and showcase innovative distance learning projects. Because each offers unique opportunities for faculty development, both interdisciplinary and discipline-specific forums should be provided. The sharing of instructional and technological innovations within disciplines would be an important aspect of the statewide disciplinary forums proposed by the 1996 Missouri Pew Higher Education Roundtable.

Institutional Support of Faculty

Recommendation #12:
Faculty participating in distance education must have institutional support from administrators and colleagues, as well as appropriate resources and technical support.

Most faculty support must come at the institutional level. While administrative support is crucial, institutional support must involve the recognition of the importance of distance learning activity by faculty colleagues. Faculty must receive appropriate support, recognition and rewards for participation in telecommunications-based delivery of instruction as described in the Best Practices for Distance Learning (Appendix B).

COOPERATIVE TECHNOLOGY STRATEGIES

Recommendation #13:
Missouri should expand its investment in a telecommunications infrastructure that supports integration of voice, video, and data transmissions as well as increased demand for network access and capacity.

George Connick expresses this recommendation in stark terms: "States must invest, or support private investment, in the 'electronic highways' of the future or their educational systems, at all levels, will not be able to compete in the future." A key recommendation of both the Telecommunications-Based Delivery System Report and the Pew Higher Education Roundtable was that Missouri work quickly to provide statewide access to a reliable electronic network with voice/video/data capability. The recommendations included these assumptions:

- Program demand should be the driving force in technology expansion.
- Technology can be used to increase access while controlling costs.
- Wise investments in technology should adhere closely to quality and interconnectivity standards.

Network Capacity and Access

Because needs should drive technology expansion, the most effective preemptive technology strategy is to invest in increased bandwidth and points of access for the state's network(s). This network capacity and accessibility will then be available as specific needs are identified and addressed over the next few years. This makes ongoing funding of the expansion of the MOREnet network, as envisioned in the current MOREnet II initiative, the central focus of our proposed strategy. In addition to the ongoing $5 million appropriation for MOREnet beginning in Fiscal Year 1998, an additional $7 million should be requested in Fiscal Year 1999 to fund expansion of the network backbone, increased access to the backbone, increased capacity connections (ten megabit channels) to all public postsecondary education institutions, and new videoserving technology.

Two-Way Interactive Video

Missouri has a number of very active two-way interactive TV (ITV) networks which operate full course schedules. A map of Missouri's video networks as of May 1997 is provided in Appendix D. Many of Missouri's ITV networks have developed as independent dedicated networks for transmission between members of a regional system. They have evolved based on the needs and resources of cooperating institutions and schools, and use a combination of analog (wired and wireless), digital (DS3) and compressed (fractional T1) technologies. Using dial-up and other interconnection capabilities, many of Missouri's ITV networks can interconnect to any site on each other's systems. For example, the UM system and Southwest Missouri State's BEARnet interconnect to share courses and programs, and the MIT-E network in north central Missouri has interconnected with the UM system and BEARnet for a variety of purposes. Another regional network, SEEnet, will deliver a variety of courses and programs across the Southeast region of the state and provide linkage to programs and courses from other institutions in Missouri.

Advances in Internet-based technologies are leading to the inevitable integration of voice, video and data transmissions. As it is anticipated that high quality digital video/voice/data transmission over the Internet will supplant other video technologies, Missouri should expand its investment in a telecommunications infrastructure that supports this scenario. This will facilitate broad interconnectability of educational resources across the state. Because high-quality digital video is

rapidly becoming more affordable, Missouri institutions are encouraged to avoid large strategic investments in high end interactive video technologies unless they are Internet-based. If investments are to be made in dedicated lines and two-way video switching technologies, institutions are encouraged to adopt compressed approaches using the H.320 standard and fractional T1 lines wherever possible, and to explore discounts available through the Midwestern Higher Education commission's Interactive Video Program.

Transitioning Pilot Projects

Pilot degree program projects should be used in Fiscal Years 1998 and 1999 to experiment with linking one or more regional ITV systems and transitioning them to Internet-based technology. The pilot projects are suggested as a way to speed the process by identifying standards-based, scaleable Internet technologies that permit full voice/video/data interaction. Such research and development projects over the next two years might entail reallocation of currently budgeted institutional funds and a new request for Fiscal Year 1999. These pilots would take advantage of the initial excess bandwidth anticipated for the MOREnet II network during early stages of its upcoming expansion. A possible pilot project would be to provide a needed degree program to rural communities by linking a college or university to one or more existing K-12 ITV networks.

NEXT STEPS

Recommendation #14:
CBHE staff should work with appropriate institutional personnel or others to develop cost estimates for the projects described in this report and recommendations for best ways to implement them, whether by CBHE initiative, institutional initiatives or external contracts in time for inclusion in the Fiscal Year 1999 budget, if possible.

The CBHE should continue to provide leadership in fostering distance learning and dedicate the appropriate staff to work with the institutions so that the recommendations contained in this report can be implemented as soon as possible. It is important to persevere in this crucial endeavor so that momentum is not lost and the state can increasingly encourage cutting-edge telecommunications-based activities to enhance distance learners.

Recommendation #15:
The progress of the system toward achieving its goals of customer-orientation, partnering, increased access, high quality and cost-efficiency should be reevaluated every two years by a representative statewide group.

Building on the groundwork laid in the 1996 Report of the Telecommunications-based Delivery System Resource Group, significant strides have been made in partnering and in improving access. This advisory group's recommendations keep the development of the telecommunications-based

delivery system for postsecondary education moving forward and challenge Missouri's public and independent colleges and universities to focus on the needs of their customers and to make emerging partnerships and consortia work effectively and proactively. The balance that will exist in the future between distance and campus-based programs is difficult to predict. For this reason, as technologies and opportunities continue their rapid evolution, Missouri must continually reassess its progress toward its distance education goals, identify emerging needs, and update its strategies to meet new realities. For this reason, it would be appropriate for the CBHE to appoint a representative statewide group every two years to review the progress of the telecommunications-based delivery system toward its goals of customer focus, partnering, access, quality and efficiency.

Appendix A

Members of the Subcommittees

Members of the Subcommittees

Program Needs, Assessment and Best Practices Subcommittee

Sheila Caskey, Southeast Missouri State University
John Cosgrove, St. Louis Community Colleges
Don Doucette, Metropolitan Community Colleges
Mike Grelle, Central Missouri State University
Nancy Klein, St. Louis Community Colleges
Jane Kost, Jefferson College
Steve Lehmkuhle, University of Missouri System
Ed Strong, Culver-Stockton College
Ron Turner, University of Missouri System

Student Support Resources Subcommittee

Don Aripoli, Southwest Missouri State University
Steve Chatman, University of Missouri System
Hal Deuser, Saint Louis University
Bill Duffy, Southeast Missouri State University
Ron Gerstbauer, North Central Missouri College
Ty Patterson, Ozarks Technical Community College
Steve Poort, State Fair Community College
Alanna Preussner, Truman State University
Jim Roever, Missouri Western State College
Ted Rohr, St. Louis Community Colleges
Henry Shannon, St. Louis Community College-Forest Park
Sue Ann Strom, Southeast Missouri State University
Kate Wright, Saint Louis University

Libraries Subcommittee

Shirley Baker, Washington University
Dan Bradbury, Kansas City Public Library
Richard Coughlin, Truman State University
Cathye Bunch Dierberg, St. Louis Community Colleges
Rita Gulstad, Central Methodist College
Sara Parker, Missouri State Library
Pal Rao, Central Missouri State University
Erlene Rickerson, William Woods University
George Rickerson, University of Missouri-Columbia
James Zink, Southeast Missouri State University

Faculty Involvement Subcommittee

Leonard Archer, Missouri Western State College
Linda Crabtree, Longview Community College
Madison Daily, University of Missouri-Rolla
Susan Devaney, Central Methodist College
Charles Kupchella, Southeast Missouri State University
Ronda Ridinger, Southwest Missouri State University
Karen Ryan, Harris-Stowe State College
Jerrold Siegel, University of Missouri-St. Louis
James Soden, St. Louis Community College-Florissant Valley
Bruce Umbaugh, Webster University

Technology Strategies Subcommittee

Gerry Boulware, Office of Administration
Tom Brenneman, University of Missouri-Kansas City
Coleman Burton, University of Missouri-Columbia
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Harold Crumpton, Missouri Public Service Commission
Gary Ellis, Southwest Missouri State University
David Jones, Mid-Missouri Telephone Company
Michele McCall, Moberly Area Community College
Bill Mitchell, MOREnet
Jerry Williams, Missouri Southern State College
Mark Ward, Office of Administration

Additional Advisor

Ron Phipps, Institute for Higher Education Policy, Washington DC

Appendix B

Best Practices in Distance Education

Best Practices In Distance Education

These Best Practices incorporate recommendations of the Telecommunications Advisory Group and its subcommittees, and build on the Guiding Principles and Desirable Characteristics for a Telecommunications-Based Delivery System established in the June 1996 Telecommunications-Based Delivery System Resource Group Report. The overarching themes in these guidelines are: (1) increasing access to educational opportunities for Missouri's citizens and (2) focusing on the needs of the learner over the needs of individual institutions. Missouri's telecommunications-based delivery system for postsecondary education should exhibit the characteristics listed below.

Improved Statewide Access

- Development and delivery of programs should be based on prioritized regional and state needs.
- Distant learners and learners with multiple enrollments should have convenient access to all needed support services.
- Full-time learners with multiple enrollments should have the same access to state financial aid programs as full-time students enrolled at a single institution.
- A coordinated and cost-effective approach to program development and delivery should be used to maximize the level of access and number of options available to citizens.
- An ongoing process of evaluation and feedback should be used to ensure that identified needs are being met effectively and efficiently.
- Programs should be delivered via technologies appropriate to the number and location of the students and the nature of the course material.
- All new technology purchases should meet or exceed international standards, be interconnectable with other state networks, and be adaptable to future needs, where possible.

Learner-Centered

- Students enrolled in distance education programs, regardless of their location, must have convenient access to all support resources appropriate to their needs and the program in which they are registered. These may include:
    - Advising and career counseling
    - Student policy information
    - Orientation and/or technical assistance with distance learning technologies
    - Library resources
    - Access to E-mail, collaborative software, or electronic chat capability, etc.
    - Reasonable services for students with disabilities

- Degree programs must be committed to student success; once enrolled, students should be guaranteed continuing student support services and the opportunity to complete their education or training in a timely fashion.
- Students need access through the CBHE web page to information regarding:
- Comprehensive, easy-to-use information about postsecondary educational opportunities available in the state through telecommunications (smart catalog)

    - Course equivalency across institutions
    - Consumer protection in distance education
    - Financial aid programs

Faculty-Supported

- Faculty must receive appropriate support, recognition and rewards for participation in telecommunications-based delivery of instruction including:
    - Professional development opportunities prior to using telecommunications-based delivery systems, and on a continuing basis as needed.
    - On-campus instructional technology centers that provide technological support as needed for course development and implementation.
    - Interactive video courses must be supported by technical expertise at on-campus sites and site coordinators at remote sites.
    - Consideration of the additional time needed in preparation for distance learning courses when determining faculty workload and/or compensation.
    - Faculty tenure and promotion criteria and procedures which reward telecommunications-based instruction, course development, and facilitation, as well as related scholarship.
    - Faculty from across the state should have an opportunity to meet together and share best practices and innovative programs.

High-Quality Instruction

- The quality and content of instruction provided through telecommunications is equivalent to (or better than) that provided through traditional means, as measured by outcomes.
- Students experience quality interaction with faculty and with other students, whether in real time or asynchronously.
- Both student and faculty performance are regularly assessed and feedback is provided promptly.
- Where appropriate, accreditation of programs is sought.

Educational Partnerships and Institutional Missions are Supported

- Institutions provide increased access to needed programs through telecommunications-based delivery of instruction and educational partnerships.
- Partnerships are designed to be efficient and effective, using a variety of appropriate models.
- Institutions in partnerships share responsibility for planning, implementing and supporting:

    - Comprehensive financial aid services
    - Student academic support services
    - Student access to information and library resources
    - Marketing and recruitment
    - Admissions standards
    - Curriculum
    - Faculty roles and relationships
    - Faculty professional development
    - Assessment of student performance
    - Assessment of faculty performance
    - Assessment of program quality and effectiveness
    - Program accreditation
    - Cost and revenue sharing
    - Technical resources and maintenance

Integrated Performance Evaluation and Improvement Strategies

- Student performance is regularly assessed by the institution providing instruction; outcomes are made available to students in a prompt and convenient fashion.
- Faculty performance is regularly assessed by the institution providing instruction; outcomes are used to improve the quality of instruction.
- Course and program quality are regularly assessed by the institution(s) providing instruction; outcomes are used to improve course and program quality.
- The state's system of telecommunications-based delivery of education and training is regularly assessed to determine whether it meets state and regional needs within the context of the goals for the postsecondary education system. The assessment outcomes are used for improving the efficiency and effectiveness of the system.

Appendix C

Draft Revised Association for College and Research Libraries Guidelines for Distance Education

ACRL *Guidelines*

Guidelines for Extended Academic Library Services: A draft

Attend the hearing in D.C., Monday, February 17, 10:00–11:00 a.m.

Library resources and services in institutions of higher education must meet the needs of all the faculty, students, and academic support staff, wherever these individuals are located, whether on main campuses, off campus, in distance education or extended campus programs, or in the absence of a campus at all, in courses taken for credit or noncredit, in continuing education programs, in courses attended in person or by means of electronic transmission, or any other means of distance education. The Guidelines delineate the elements necessary to achieve these ends.

The audience for the Guidelines includes library staff planning for and managing these extended academic services, other library staff working with extended program staff, faculty, administrators at all levels within the educational institution, and sponsors of academic programs, as well as accrediting and licensure agencies.

The decision to revise the 1990 Guidelines was made first by the ECLSS Guidelines Committee, then the official mandate came from the ECLSS Executive Board at its final 1996 Midwinter Meeting. The 1990 Guidelines resulted from the first revision of the original 1981 Guidelines. As in that initial revision, the current decision to revise was based on the following identical, though increasingly critical, factors: nontraditional study becoming a more commonplace element in higher education, an increase in diversity of educational opportunities, an increase in the number of unique environments where educational opportunities are offered, an increased recognition of the need for library resources and services at locations other than main campuses, an increased concern and demand for equitable services for all students in higher education, no matter where the classroom may be, a greater demand for library resources and services by faculty and staff at extended academic sites, and an increase in technological innovations in the transmittal of information and the delivery of courses. To these may be added the appearance and rapid development of the virtual or all-electronic university, having no physical campus of its own.

Definitions

Extended academic library services refers to those services in support of college or university courses and programs offered away from the main campus, or in the absence of a traditional campus. These courses may be taught in traditional or nontraditional formats or media and may or may not involve live interaction of teachers and students. This definition includes all programs designated as off-campus or distance learning. Also included are services for individuals who are involved in extended academic programs, regardless of where credit is given.

Extended academic community covers all those individuals and agencies directly involved with academic programs or extension services offered away from the traditional academic campus, or in the absence of a traditional academic campus, including students, faculty, researchers, administrators, sponsors, and staff.

Parent institution refers to the entity or overall organization, responsible for the offering or marketing of extended academic courses and programs—the credit granting body.

Library denotes the library operation directly associated with the parent institution.

Philosophy

The Guidelines assume the following precepts: the parent institution is responsible for funding and appropriately meeting the information needs of its extended academic programs in support of their teaching and learning, and when applicable, research. This support should

Racing the winds of change: Revision of the 1990 ACRL Guidelines for ECLSS

What's in a name?

One of the greatest challenges in revising the Guidelines has been to meet the dual needs of defining excellence for the nature and structure of existing programs and for developments in the very near future and beyond. This challenge is most dramatically reflected in the actual terminology chosen for the document, starting with the title itself.

While the terms "off-campus" and "extended campus" have been used somewhat interchangeably, extended campus has been generally understood to be broader in application. This was no doubt a motivating factor in naming the Extended Campus Library Services Section (ECLSS). It is further agreed among the current leadership of the section that "extended campus" is intended to apply to all aspects of providing postsecondary instruction away from the traditional college or university campus. This scope, therefore, includes programs labeled "distance learning" or "distance education," in spite of the existence, both inside and outside ALA, of separate groups and organizations which deal exclusively with such library services. As with ECLSS, the Guidelines are intended to apply to the total spectrum of such extended instruction.

A rose by any other name

The challenge upon which we are now focused then is deciding what terminology best reflects the scope and purpose of the Guidelines, starting with the title. The major problem with "extended campus" is that it assumes the existence somewhere in every extended education program of a traditional campus with classrooms and all the other support facilities.

Today, with the appearance and rapid development of institutions that originate electronically and have no campuses with classrooms and/or physical plants at all, except for administrative offices and telecommunications facilities, that assumption is rapidly becoming obsolete.

Simultaneously with these developments, the phrase "distance learning" is now being used to apply as broadly as "extended campus." It has likewise been suggested as an alternative to compensate for these "campusless" institutions and their programs. One of the problems with using the phrase "distance learning" is that it has rather been used with much narrower applications.

Another problem with that phrase is that in its literal meaning and narrower application, it is something that students only accomplish and does not encompass the teaching and research activities of the faculty who must be present in some capacity—although not always live—in order for the learning to take place. Therefore, in preparation of the draft revision, the phrase "extended academic" has been chosen as the most universally applicable.

Extended academic comes with a no baggage of past applications and is not inhibited by referral to the traditional campus. Further, extended academic has the advantage of application not only within all aspects of current and future efforts in postsecondary education but also potentially to all levels of education, as telecommunications options spread downward and as well as outward in the educational arena.

Thus we have the new title: "ACRL Guidelines for Extended Academic Library Services" and a resultant global change in phrasing for the entire document. The phrase "extended academic library services" then abounds throughout the text of the Guidelines and supplies their backbone. As the revised Guidelines unfold, one becomes keenly aware of the new breadth and power of their applicability due to this change of vocabulary and its implications.

Much of the concern that has been expressed by librarians and librarians doing something about the provision of library services to the students of the electronic universities present and future, is now addressed by the Guidelines via this shift in vocabulary. Of course, many more specific revisions and additions can be found throughout the draft document which reflect and reinforce this change.—*Harvey Grove, Washington State University*

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provide ready and equitable library service and learning resources to all its students regardless of location.

The parent institution recognizes the need for service management and technical linkages between the library and other complementary resource bases such as computing facilities, instructional media, and telecommunication centers.

The parent institution is responsible for assuring that its extended academic library programs meet or exceed national and regional accreditation standards and professional association standards and guidelines.

The parent institution is responsible for involving the library in the detailed analysis of planning, developing, adding, or changing the extended academic program from the earliest stages onward.

The library has primary responsibility for identifying, developing, coordinating, and providing library resources and services which meet both the standard and the unique information needs of the extended academic community. A librarian-coordinator, either centrally located or at an appropriate site, should be responsible for ensuring that all requirements are met.

Effective and appropriate services for extended academic communities may differ from those services offered on the traditional campus. The requirements of academic programs should guide the library's responses to defined needs. Innovative approaches to the design of special procedures or systems to meet these needs are encouraged.

When resources and services of unaffiliated local libraries are to be used to support information needs of the extended academic community, the library or, when appropriate, the parent institution, is responsible for the development and periodic review of formal documented, written agreements with these local libraries. Such resources cannot normally be used as substitutes for supplying adequate resources by the parent institution.

The extended academic library program shall have goals and objectives that support the provision of resources and services consistent with the broader institutional mission.

Management

It is the responsibility of the library management to fund, staff, and supervise library services and resources in support of extended academic programs. The librarian-coordinator, who may or may not have an extended site assignment, should:

1) assess, on an ongoing basis, the needs of the extended academic community for library resources, both electronic and traditional, and services, including instruction, and facilities;

2) prepare a written profile of the extended community's information needs;

3) develop a written statement of immediate and long-range goals and objectives which addresses the needs and outlines the method by which progress can be measured;

4) involve extended academic community representatives, including administrators, faculty, and students, in the formation of the objectives and the regular evaluation of their achievement;

5) using the written profile of needs, assess the existing library support, its availability, and appropriateness;

6) participate with administrators and faculty in the curriculum development process and in course planning to ensure that appropriate library resources and services are available;

7) promote library support services to the extended academic community;

8) pursue, implement, and maintain all the preceding.

Additional areas of management responsibility are covered in sections on Finances, Personnel, Facilities, Resources, and Services.

Finances

The parent institution should provide continuing, optimum financial support for addressing the library needs of the extended academic community. This financing should be:

1) related to the formally defined needs and demands of the extended academic program;

2) allocated on a schedule matching the parent institution's budgeting cycle;

3) identified within the parent institution's budget and expenditure reporting statements;

4) accommodated to arrangements involving external agencies, including affiliated but independently supported libraries;

5) sufficient to allow for initiating innovative new approaches to meeting needs.

Personnel

Personnel involved in the management and coordination of extended academic library services may include institutional and library administration, the librarian-coordinator managing the services, additional professional staff in the institution, support staff from a variety of departments, and the administrator(s), librarian(s), and staff from the extended site(s).

The library should provide professional and support personnel with clearly defined responsibilities at the appropriate location(s) and in the number and quality necessary to attain the goals and objectives for library services to the extended academic program including:

1) a librarian-coordinator to plan, implement, coordinate, and evaluate library resources and services addressing the information needs of the extended academic community;

2) additional professional and/or paraprofessional staff to interact directly with library users with the capacity and skills to identify information needs and respond to them competently and appropriately;

3) classification, status, and salary scales for extended academic library staff that are equivalent to those provided for other comparable library employees and reflecting the compensation levels and cost of living for those teaching at extended sites;

4) opportunities for continuing growth and development for extended academic library staff.

Facilities

The library should provide facilities, equipment, and communication links sufficient in size, number, and scope, and current enough to attain the objectives of the extended academic programs. Arrangements may vary and should be appropriate to programs offered. Examples of suitable arrangements include, but are not limited to:

1) access to facilities through agreements with a nonaffiliated library;

2) designated space for consultations, ready reference collections, reserve collections, electronic transmission of information, computerized database searching, and interlibrary loan services;

3) a branch or satellite library.

Resources

The parent institution is responsible for providing or securing direct physical or electronic access to library materials in sufficient quality, depth, number, scope, currency, and formats to:

1) support the students' needs in fulfilling course assignments (e.g., required and supplemental readings and research papers) and enrich the academic programs;

2) support teaching and research needs;

3) accommodate other information needs of the extended academic community, as appropriate.

Programs granting associate degrees should provide access to collections which meet the ACRL "Standards for Community, Junior, and Technical Learning Resources Programs." Programs granting baccalaureate or master degrees should provide access to collections which meet the standards defined by the ACRL "Standards for College Libraries." Programs offering doctoral degrees should provide access to collections which meet the standards defined by the ACRL "Standards for University Libraries."

Services

The library services offered the extended academic community should be designed to meet effectively a wide range of information-related,

Developing the Guidelines

This draft revision of the 1990 ACRL Guidelines for Extended Campus Library Services was prepared by Harvey Gover, chair of the Guidelines Committee of the ACRL Extended Campus Library Services Section (ECLSS). The draft is based upon input from members of the Guidelines Committee, members of the ECLSS Executive Board, the general membership of ECLSS, and other librarians and administrators involved in extended academic programs from across the nation and around the world.

In response to requests for suggestions for revision which appeared in widely read national academic and library publications, distance education listservs, and through ECLSS Web site publications, numerous other individuals, consortia, and representatives of professional and accrediting associations provided information on their own efforts to ensure excellence of library services for extended academic programs. Among the groups responding were the Interinstitutional Library Council of the Oregon State System of Higher Education, College Librarians and Media Specialists, the Consortium for Educational Technology for University Systems Libraries and the Western Governors University Conference, the Commission on Colleges of the Northwest Association of Schools and Colleges, the Southern Association of Colleges and Schools, and the Western Cooperative for Educational Telecommunications of the Western Interstate Commission for Higher Education.

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graphic, and user needs. The exact combination of central and site staffing will differ from institution to institution. Examples that may help meet these needs include:

1) reference assistance;

2) computer-based bibliographic and information services;

3) reliable, secure access to institutional and other networks including the Internet;

4) consultation services;

5) a program of library user instruction designed to instill independent and effective information literacy skills while specifically meeting the learner support needs of the extended academic community;

6) assistance with nonprint media and equipment;

7) reciprocal borrowing, contractual borrowing, and interlibrary loan services in broadest application of fair use of copyrighted materials;

8) prompt document delivery such as courier system or electronic transmission;

9) access to reserve materials;

10) adequate service hours for optimum access by users;

11) promotion of library services to the extended academic community, including documented and updated policies, regulations, and procedures for systematic development and management of information resources.

Documentation

The library should make available current copies of the following:

1) printed guides;

2) statements of mission and purpose, policies, regulations, and procedures;

3) statistics on library use;

4) statistics on collections;

5) facilities assessment measures;

6) collections assessment measures;

7) data on staff and work assignments;

8) institutional and internal organization charts;

9) comprehensive budget(s);

10) professional staff vitae;

11) formal, written agreements;

12) automation statistics;

13) guides to computing services;

14) library evaluation studies of documents.

Library education

Schools of library and information science should include in their curricula courses and course units in extended academic library services. ■

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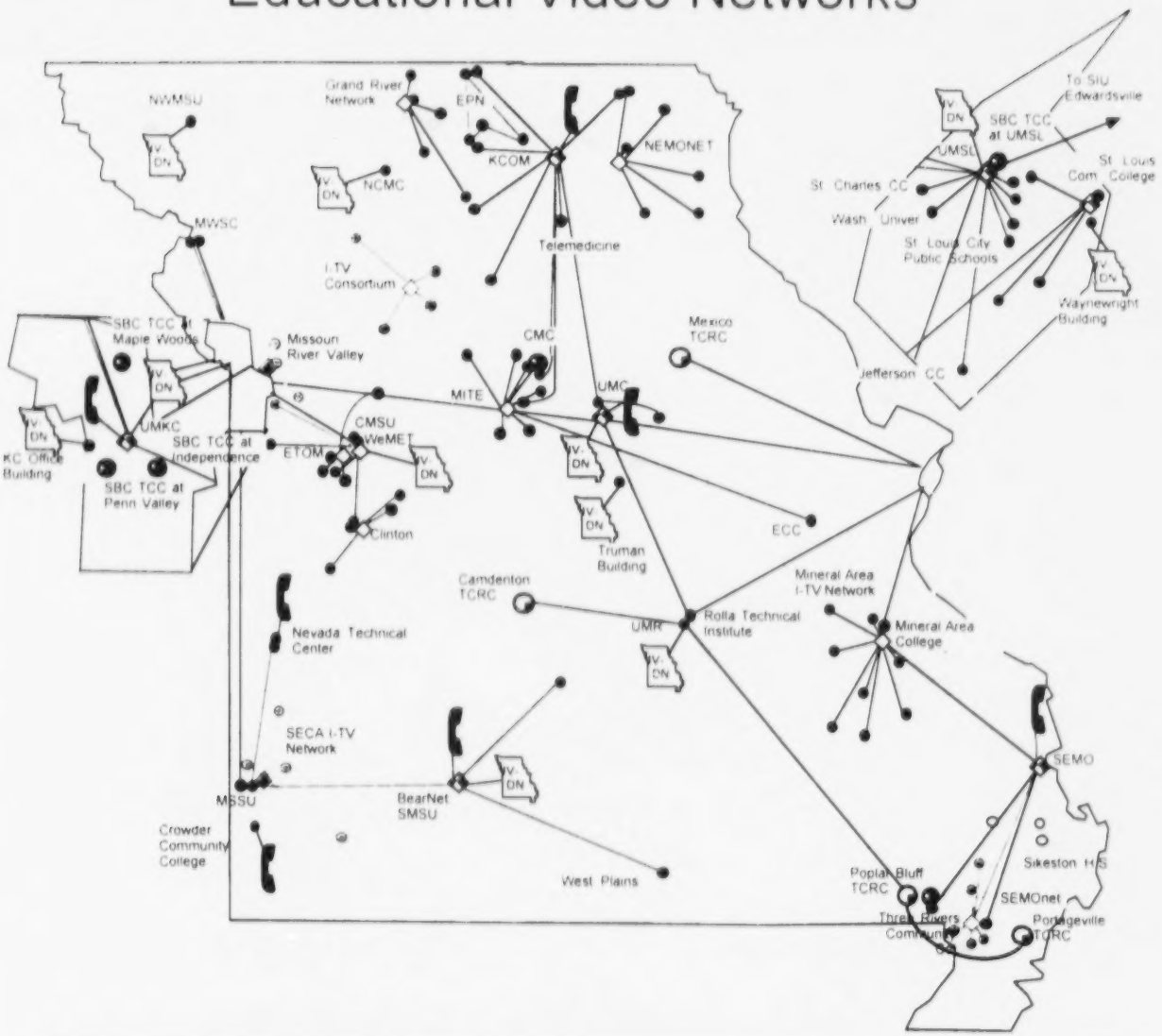
Appendix D

Missouri's Interactive Video Education Networks

Missouri's Two-Way Educational Video Networks



Multi-Technology / Network Hub

SBC TeleCommunity Center (TCC)

UM TeleCommunity Resource Center (TCRC)

Digital Network Hub

Analog Network Hub

IVDN Video Connection

ISDN PRI Dial-Up Connection

ATM (39 mbps)

ISDN (T1)

Full T-1

Analog Fiber

Two-way Analog Microwave

DS-3 Fiber

1/2 T1 (768 kbps)

1/4 T1 (384 kbps)

768 kbps Ethernet

Compiled by J. Scott Christianson for the MO I-TV Information Alliance K-12 Users Group; see attached sheet for network details and contact information. Permission is granted to reproduce and distribute freely with acknowledgement. Newest version is available via www at http://jsc.simplenet.com/

DRAFT: May 20, 1997

Network Details

K-12 Networks

EPN Network
Green City R-I
Milan C-2
Novinger
Putnam Co. R-I

MIT-E Network
Central Methodist College
Cooper Co. R-IV
Cooper Co. C-4
New Franklin
Howard Co. R-II
Slater

NEMONet
Knox County
Lewis Co. C-I
Marion Co. R-II
North Shelby
Scotland R-I
Wyaconda C-I

WeMET
Central Missouri
State University
Clinton, #124
Holden R-III
Pleasant Hill R-III
Warrensburg R-VI
Blue Springs

Sikeston R VI
Bell City H.S.
Sikeston H.S.
Scott County
Central Schools

St. Louis City
Beaumont H.S.
Sumner H.S.
Roosevelt H. S.
Vashon H.S.

ETOM Network
Concordia R-II
Crestridge R-VII
Kingsville R-I
Chilhowee R-IV

Grand River Network
Linn County RI
Princeton R-V
North Mercer R-III
Newton-Harris R-III
Grundy County R-V

SEMO Net
Malden R-I
Bernia R-XIII
Campbell R-II
Clarkton C-4
Dexter R-XI
Gideon #37
Southeast MO
State Univ
Puxico R-VIII

Mineral Area I-TV Net
Central R-III
Farmington R-VII
Fredericktown R-I
Lesterville R-IV
North St. Francois R-V
Potosi R-II
South Iron R-I
Valley R-VI
Arcadia Valley R-II
Mineral Area College

SECA I-TV Network
Carl Junction R-I
Carthage R-IX
Lamar R-I
Monett R-I

I-TV Consortium
Hale R-I
Tina Avalon
Norborne
Bosworth
Brechkenridge

Missouri River Valley
Fort Osage R-I
Grain Valley
Missouri City
Elementary

Clinton
Clinton
St. Clair County R-II
Winsor
Calhoun

Additional Linkages For Multi-Technology / Network Hubs

UMSL Connects to:
AT&T
SLCC System (Cable)
Jefferson College
St. Charles Community
College
Coop. School Districts (ITFS)
Illinois State System

UMKC Connects to:
Penn Valley CC
KCPT
WDAF Teleport
KCP&L
Kansas State Network

UMC Connects to:
Telemedicine Project

Network Details

Notes

1) Does not include cable links in the metropolitan areas, the satellite uplinks at the four M.U. sites, school district and extension satellite downlinks.
2) State IVDN Video connections are usually at 1/4 or 1/2T. Total bandwidth on IVDN lines are T1. Connection of the state IVDN network to the University of Missouri network allows for interconnectivity to all MU sites and connections.
3) This map was compiled by J. Scott Christianson and Mike Jeffries using available information; there is no guarantee of the accuracy of the connections shown. Contact the institution or network for more information about a particular site. Send all corrections, additions and requests for up-dates to either:

Mike Jeffries
WeMET Director
Humphreys 403 -CMSU
Warrensburg, MO 64093

J. Scott Christianson
Technical Coordinator
411 Cntrl Methd. Sq.
Fayette, MO 65248

Integrated Voice Data Network Video Connections

Colleges and Universities
University of Missouri -Columbia
University of Missouri -Kansas
University of Missouri -St. Louis
Southwest Missouri StateUniversity - Springfield
Central Missouri State University - Warrensburg
Northwest Missouri State Univerity - Maryville
Northcentral Missouri State University - Trenton

State Government
Kansas City Office Building
Waynwright Building (St. Louis)
Truman Building (Jefferson City)

Via UM Network to:
University of Missouri - Rolla
TCRC in Poplar Bluff
TCRC in Camdenton
TCRC in Portageville
TCRC in Mexico

Telemedicine Project

Adair County
Kirksville College of Osteopathic Medicine
Kirksville Osteopathic Medical Center

Boone County
UM Health Sciences Center (Columbia)
Ellis Fischel Cancer Hospital (Columbia)

Callaway County
Callaway Community Hospital (Fulton)
Callaway Physicians (Fulton)

Chariton County
Keytesville Clinic (Keytesville)

Cooper County
Cooper County Memorial Hospital (Boonville)
University Physicians (Boonville)

Howard County
Fayette Medical Clinic

Linn County
Pershing Memorial Hospital (Brookfield)

Macon County
Samaritan Memorial Hospital (Macon)

Putnam County
Putnam County Memorial Hospital (Unionville)

Scotland County
Scotland County Memorial Hospital (Memphis)

Sullivan County
Sullivan County Memorial Hospital (Milan)

Network Details

Contact Information — Networks

St. Louis City Schools
Philip Brody
Director of Technology
911 Locust St.
St. Louis, MO 63101

EPN
Nancy Steele
EPN Director
Rt 3, Box 15
Unionville,MO 63565

MITE
Vicki Hobbs
MITE Director
4001 South Coats Lane
Columbia, MO 65203

IVDN
Chris Wilson
Truman Building, Suite 280
Jefferson City, MO 65101

NEMONet
Dan O'Donnell
Scotland Co. R-I
P.O. Box 337
Memphis, MO 63555

Sikeston — Bell City
Dr. Arnold Bell
Sikeston R-VI
1002 Virginia
Sikeston, MO 63801-3347

Telemedicine
Joe Tracy
Director, Telemedicine Project
University of Missouri -Columbia
Old Alumni Building
Columbia, MO 65212

WeMET
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WeMET Director
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University of Missouri
Coleman Burton, Director
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Bear Net
Gary Ellis, Director
Media Based Instruction-SMSU
901 South National Avenue
Springfield, MO 65804

Mineral Area I-TV Network
Ron Fadler,
Mineral Area College
PO Box 1000
Park Hills, MO 63601

ETOM
Andy D. Henley
Chilhowee R-IV
101 Hwy 2
Chilhowee, MO 64733-0098

Grand River Network
Bob Yates
Princeton R-V
1008 E. Coleman
Princeton, MO 64673-1210

SEMO Net
David Hollinghead
Malden R-I
407 County Rd. J
Malden, MO 63863-1875

SECA Net
Glenn Coltharp
Carl Junction R-I
206 S Roney
Carl Junction, MO 64834

I-TV Consortium
Dr. Bill Page
Hale R-I
PO Box 248
Hale, MO 64643-0248

Clinton I-TV Network
Martin Cooper, Director
Clinton's Central Board of
Distance Learning
105 East Ohio
Clinton, MO 64735

Missouri River Valley I-TV Consortium
Rhichard Philips
Fort Osage R-I
2101 N Teyman Rd.
Independence, MO 64058-3200

Network Details

Contact Information — Higher Education Institutions

Central Methodist College
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411 Central Methodist Square
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jsc@igc.apc.org

Central Missouri State University
Dale Carder
Office of Extended Campus
Humphreys 404 - CMSU
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East Central College
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East Central College
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Nevada Technical Center
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KCOM
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Southeast Missouri State University
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Southeast Missouri State University
One University Plaza
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Southwest Missouri State University
Gary Ellis, Director
Media Based Instruction
901 South National Avenue
Springfield, MO 65804

University of Missouri - Columbia
David Dunkin
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University of Missouri - Kansas City
Tom Brenneman, Director
Interactive Video Network
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University of Missouri - St. Louis
Doug Clapp, Director
Instructional Technology Center
113 Lucas Hall — UMSL
8001 Natural Bridge Road
St. Louis, MO 63042

University of Missouri - Rolla
Ross Haselhorst, Manager
Video Communications Center
1870 Miner Circle
Rolla, MO 65409

Mineral Area College
Ron Fadler,
Mineral Area College
PO Box 1000
Park Hills, MO 63601

North West Missouri State University
Mike Grunzinski
Room 233--Owens Library
800 University Drive
Maryville, MO 64468

St. Louis Community Colleges
Ted Rohr
St. Louis Community College
300 South Broadway
St. Louis, MO 63102-2810

North Central Missouri College
Frank Veeman
North Central Missouri College
1301 Main Street
Trenton, MO 64683

Network Details

Contact Information — Univeristy of Missouri TeleCommunity Resource Centers (TCRCs)

UM TCRC State-wide contact
James Summers, Director
Telecommunications Program Development
818 Clark Hall
Columbia, MO 65211

UM TCRC at Poplar Bluff
Judy Moss, Coordinator
Poplar Bluff-TCRC
1121 Victory Lane
Poplar Bluff, MO 63901

UM TCRC at Portageville
Judy Moss
Interim Coordinator
Portageville TCRC
P.O. Box 160
Portageville, MO 63873

UM TCRC at Camdenton
Jim Dickerson
Coordinator
Work Connections
P.O. Box 523, 115 W. Hwy. 54
Camdenton, MO 65020

UM TCRC at Mexico
Vivin Mason
Coordinator
Mexico TCRC
Box 491, 305 W. Jackson St.
Mexico, MO 65265

Contact Information — Southwestern Bell TeleCommunity Centers (TCCs)

SBC TCC State-Wide Contact
Mike David, TCC Project Manager
Southwestern Bell
500 East 8th Street, Room 1324
Kansas City, MO 64106

SBC TCC at MCC Penn Valley
Len Nevels, Director
SBC TCC-Penn Valley Campus
3201 S.W. Trafficway
Kansas City, MO 64111

SBC TCC at MCC Independence
Fred Holtz, Director
SBC TCC-Independence Campus
20301 E. 78 Highway
Inpependence, MO 64057

SBC TCC at MCC Maple Woods
Robert Trottmann, Director
SBC TCC-Maple Woods Campus
2601 N.E. Barry Road
Kansas City, MO 64156

SBC TCC at UMSL
Chuck Simino, Director
SBC TCC-UMSL Campus
8001 Natural Bridge Road
St. Louis, MO 63042

SBC TCC at Poplar Bluff
Greg Kubik, Director
SBC TCC-Three Rivers Campus
2080 Three Rivers Blvd.
Poplar Bluff, MO 63901

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Virginia Wishard Lambert, Director
SBC TCC-CMC Campus
411 Central Methodist Square
Fayette, MO 65248